

Citrus College

Course Syllabus

Chem. 110

Summer 2011

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E-Mail: bfarahani@citruscollege.eduWeb Site: www.citruscollege.edu/academics/courses/farahani**Lecture Text:** Introductory Chemistry; 3rd Edition; Nivaldo Tro.**Laboratory Manual:** Chem. 110 Laboratory Experiments; Staff.**Course Prerequisite:** Math 150 (or concurrent enrolment).**Required Material:** Approved safety goggles by Tuesday June 28nd.

Grading:	90%+ = A	80-89% = B	65-79% = C	50-64% = D
<u>Lecture: 70%</u>			<u>Laboratory: 30%</u>	
In Class Assignments	10%		Quizzes	5%
Exam 1	15% (Thursday – 7/7)		Problem Sets	5%
Exam 2	15% (Thursday – 7/21)		Pre-Labs	5%
Exam 3	15% (Thursday – 8/4)		Lab Reports	15%
Final Exam	15% (Thursday – 8/18 – 8:00-9:30 am)			

Lecture:**In Class Assignments:** Will be given @ the start of each class (30 minutes) – Open books & notes. No other help is allowed!**Exams:** Closed books & notes. A periodic table & necessary notes will be provided to you! You need calculator (your own). No cell phone is allowed to be used as calculator. No make up exam!**Important Information:**

1. A total of three lectures and/or lab absences will result in drop from the class.
2. In class assignments, course schedule change, topics in the exams, are given & noted in the class, your participation is mandatory.
3. There are no make up work.
4. No work is dropped.
5. No late work is accepted.
6. Last day to drop w/o record is 7/6; last day to withdraw is 7/25. Stop attending after 7/19 will result in a grade of "F" for the class.
7. All work submitted with your name on it is assumed to be original (done by you only). Any deviation will be dealt with according to "Standard of Conduct" (page 195).

Tentative Course Schedule

Week	Chapter	Topics
1		
M. 6/27	2 Laboratory	<i>Measurements & Problem Solving</i> – scientific notation; sig. fig Check-in; Safety
T. 6/28	2 Laboratory	basic units of measurement; unit conversion; density Exp. #1 – Density
W. 6/29	3 Laboratory	<i>Matter & Energy</i> – solid; liquid; gas; physical & chemical properties Exp. #1 – Write up
Th. 6/30	3 Laboratory	separation of mixture; energy; temperature; heat capacity Exp. #3 – Calorimetry
2		
M. 7/4		Independence Day - Holiday
T. 7/5	Laboratory	<i>Atoms & Element</i> – proton; neutron; electron; isotopes; atomic mass Exp. #3 – Write up
W. 7/6	9 Laboratory	<i>Electrons in Atoms & The Periodic Table</i> – EMR; atom; orbitals Exp. #2 – Separation of Compounds of a Mixture
Th. (7/7)	Exam 1 Laboratory	Exp. #2 – Write up
3		
M. 7/11	9 Laboratory	electron configuration; periodic trends Exp. #8 – Flame Test – Write up
T. 7/12	5 Laboratory	<i>Molecules & Compounds</i> – chemical formulas; ionic compounds Problem Set #1
W. 7/13	6 Laboratory	<i>Chemical Composition</i> – mole; percent composition Problem Set #2
Th. 7/14	6 Laboratory	empirical formula; molecular formula Problem Set #3
4		
M. 7/18	7 Laboratory	<i>Chemical Reaction</i> – chemical equation; aqueous solutions; solubility Exp. #5 - %Cu in copper(II) Sulfate Pentahydrate
T. 7/19	7 Laboratory	molecular & net ionic equations; acid-base reactions Exp. #5 – Write up
W. 7/20	8	<i>Quantities in Chemical Reactions</i> – mass-mass conversion

	Laboratory	Exp. #14 – Types of Reactions
Th. 7/21	Exam 2	
	Laboratory	Exp. #14 – Write up
5		
M. 7/25	8	limiting reactant; theoretical yield; %yield; ΔH
	Laboratory	Exp. #10 – Reactions between Ions in Aqueous Solutions
T. 7/26	10	Chemical Bonding – valence electrons; electron dot; Lewis structure
	Laboratory	Exp. #10 – Write up
W. 7/27	10	molecular shapes; electronegativity; polarity
	Laboratory	Exp. #9 - Alum
Th. 7/28	11	<i>Gases</i> – pressure units; Boyle's law; Charles' law; Avagadro's law
	Laboratory	Exp. #9 – Write up
6		
M. 8/1	11	ideal gas law; molar volume; STP; gases in chemical reactions
	Laboratory	Problem Set #4
T. 8/2	12	<i>Intermolecular Forces</i> – dispersion; dipole; H-bonding
	Laboratory	Problem Set #5
W. 8/3	13	<i>Solutions</i> – electrolytes; %mass, molarity
	Laboratory	Exp. #6 – Mg/HCl(aq)
Th. 8/4	Exam 3	
	Laboratory	Exp. #6 – Write up
7		
M. 8/8	13	solution stoichiometry; dilution
	Laboratory	Problem Set #6
T. 8/9	14	<i>Acids & Bases</i> – definition; neutralization reactions
	Laboratory	Exp. #16 – Concentration of CaCl₂
W. 8/10	14	titration; weak acids & bases
	Laboratory	Exp. #16 – Write up
Th. 8/11	14	pH scale; buffers
	Laboratory	Exp. #12 – Acetic Acid Content of Vinegar
8		
M. 8/15	15	<i>Chemical Equilibrium</i> – rate of reaction
	Laboratory	Exp. #12 – Write up
T. 8/16	15	equilibrium constant; Le Chatlier's principle
	Laboratory	Problem Set #7
W. 8/17	Review	

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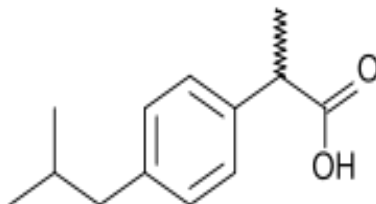
Prof. Badieh Farahani

Th. 8/18 **Laboratory Check out**
Final Exam – 8:00-9:30 am



You Must Wear Goggles @ all Time in the Lab!

In Case of Spill Wash with Plenty of Water!



Ibuprofen (Advil)

Chemistry Lab Expectation

Laboratory: The lab consists of wet labs (experiments), Dry labs (write up), problem sets, and quizzes. There is no make up lab. No lab report is accepted without doing the experiment.

Quizzes: A 15-minute quiz will be given @ the start of the lab period. Quizzes are closed books & notes. A periodic table will be provided to you. You need calculator (your own). No make up quiz.

Problem Sets: Will be given during the lab period. You need your book & calculator. The problem sets must be done during lab period & in the class room!

Pre-Labs: A typed write up of the experiment is due @ the start of the lab period. Pre-labs must be written in your own word; a copy of the manual is not accepted. No late pre-lab is accepted. The pre-labs will be returned to you @ the start the next lab to be attached to the lab report.

Format of the pre-lab: pre-lab must be written (typed) in the following order (1-4). The heading listed below must be typed on the left-hand side of the page, bold, underlined, & in numerical order.

1. Name, Date:

2. Experiment Title:

3. Initial Statement: Explain the reason for doing the experiment. Techniques used, chemical reactions, and mathematical expression must be included. No more than three sentences. A copy of manual is not accepted.

4. Procedure: A detailed explanation of the experiment in your own words. A copy of the manual is not accepted. Include figures.

Lab Report: The pre-lab must be stapled to the rest of the lab report. The following order must be followed for the typed report. Late lab report will be give half credit only! No late report is accepted after the week of experiment.

Format of the lab report: the following order & headings must be followed!

5. Data: raw numerical data & observations (color, odor, formation of solid, heat,...). Data must be written originally in ink in the space provided in the lab manual. Correct sig fig, units, & instructors signature is needed to get full credit.

6. Calculation/Graphs: results calculated from the raw data (lab manual). Show all work. Calculations can be in pencil. Correct # of sig fig, units, and instructor's signature is needed to get full credit. Computer generated graphs must be included in this section.

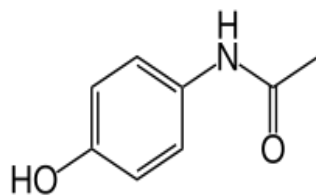
7. Questions: you must write the original question as well as the answer.

8. Conclusion: what are the results? How confident are you in them? The important discussion is to support your “confidence” with some evidence from the experiment. Do not say “I am confident in my results because I followed the instructions carefully”. Were your results reproducible? Did you violate any laws of science? Initial statement, observations,...should often be reflected here. No procedure type discussion is accepted!

9. Sources of Error: Three possible sources of error should be listed. You must give detailed reasoning of how it could affect the results (example: the filter paper was not completely dry – this resulted in recorded mass to be high, therefore the calculated %yield was high)

10. Verification: A computer generated calculation to verify the results of your calculation.

You Must Wear Goggles @ all Time in the Lab!



Acetaminophen (Tylenol)